

REMARKS

In response to the Office Action of February 25, 2003, the applicants offer the following remarks. First, the applicants appreciate the opportunity given their counsel, Joshua L. Cohen and Steven E. Bach, to discuss the subject matter of the claimed invention in a telephone interview with Examiner Estremsky on April, 28, 2003. The applicants make the substance of the interviews of record, in compliance with 37 C.F.R. §§ 1.2 & 1.133(b) and M.P.E.P. § 713.04, as follows.

Briefly and in summary, the latching system of the present invention provides releasable engagement between two structures. As recited in claim 1, a stud extends outwardly from a first structure along an axis. The stud has an outer surface oriented at an angle to the axis to define an outer diameter along at least an end portion of the stud. A resilient member is secured adjacent a surface of a second structure. The resilient member has a substantially torroidal configuration defining an opening, having a relaxed state smaller than the outer diameter of the end portion of the stud. The opening of the resilient member is configured to resiliently contact the stud to expand radially outwardly to permit passage of the end portion of the stud upon application of a force parallel to the axis. The opening of the resilient member is further configured to engage the outer surface of the stud when the resilient member is relaxed, thereby providing engagement between the structures. The opening of the resilient member is also configured to expand to release the outer surface of the stud upon application of an opposite force parallel to the axis, thereby releasing the structures.

Claims 1-8, 14, 15, 19, and 22 - 26 are pending in the present application. Claim 15 stands rejected under 35 U.S.C. § 112, second paragraph as being indefinite. Claims 1-8, 14, 19, and 22-25 stand rejected under 35 U.S.C. § 102 for anticipation by Goss (US 5,639,113). Claims 1-3, 6-8, and 24 stand rejected under 35 U.S.C. § 102 for anticipation by Bergdorf (US 2,577,507). Claims 1-8, 14, 15, and 22-25 stand rejected under 35 U.S.C. § 102 for anticipation by Larson (US 5,154,308). Claim 15 is rejected under 35 U.S.C. § 103 for obviousness in view of Goss.

The applicants' counsel summarized the present invention and contrasted it with the cited references. The applicants' counsel also presented proposed claim amendments adding structural limitations for performing releasable engagement to define over the cited art, and discussed the possibility of adding a means-plus-function claim directed to the structure disclosed in the specification (and equivalents thereof) for engagement and disengagement. Examiner Estremsky advised that the amendments would likely not be entered after final and suggested the filing a request for continued examination.

U.S. Patent No. 5,639,113, issued to Goss et al., is directed to a fastening assembly for a vehicle air bag. A resilient lock element is slidably carried on a projecting portion of a coupling member and arranged for snap fit into a locking position within a locking member to secure fastening of a module to a vehicle component. A resiliently compressible split ring is slidably carried within a contoured recess on a coupling pin.

U.S. Patent No. 2,577,507, issued to Dale W. Bergdorf is directed to a catch for securing a cabinet or cupboard door in a closed position. Bergdorf recites that "[a]s an important feature of the present invention, the engaging fingers 12 are resiliently and constantly urged into immediate association with each other by means of a resilient member, such as coil spring 14 that is in constant and tight association with the flared ends 13 of fingers 12. Thus these fingers 12 which inherently and preferably have a certain amount of resiliency, are prevented from ever being sprung out of shape such as would prevent functioning of the base plate and fingers as a portion of the catch." (Col. 2, lines 30-41) In Bergdorf, the fingers, not the spring, contact and engage a spherical or round head 16.

U.S. Patent No. 5,154,308, issued to Douglas A. Larson, is directed to a detachable cover and drum liner. A liner bag includes a collar 96 surrounding an opening in the bag, and having a groove 106 for receiving a retainer ring 108. Retainer ring 108 snaps into an annular groove 88 in an extension 80 in the drum to engage the liner to the drum.

In response to the various paragraphs of the Office Action, the applicants offer the following specific remarks.

A. Paragraph 1

Section 112, 2d Para.: The Office Action rejects claim 15 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the applicants regard as their invention. Specifically, the Office Action states that it is not clear what is meant by the limitation "mounted on said door adjacent a surface of said door" and whether "[positioned]" is intended in the clean copy of the claim. Claim 15 has been amended, obviating this rejection.

B. Paragraphs 3 and 4

Anticipation, Section 102: The Office Action rejects claims 1-8, 14, 19, and 22-25 under 35 U.S.C. § 102(b) as being anticipated by United States Patent No. 5,639,113 issued to Goss. Anticipation requires that each and every limitation of the claim be disclosed, either expressly or under principles of inherency, in a single prior art reference. In re Robertson, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999) (reversing Board's anticipation rejection that was based on principles of inherency); MPEP § 2131. Absence from the reference of any claimed limitation negates anticipation. Rowe v. Dror, 42 USPQ2d 1550, 1553 (Fed. Cir. 1997) (preamble claim limitation reciting a balloon angioplasty catheter not anticipated by a general purpose balloon catheter).

Claim 1 as amended recites, as one limitation, a torroidal radial spring or torroidal resilient member defining an opening "configured to resiliently contact said stud to expand radially outwardly to permit passage of said end portion of said stud upon application of a force parallel to said axis ..." The Goss reference neither expressly nor under principles of inherency discloses that limitation. Accordingly, the applicants respectfully submit that the Goss reference does not anticipate claim 1.

Goss instead teaches a locking ring 28 which is compressed into an annular groove 30 allowing the locking ring and a coupling pin 12 to pass through a tapered bore and re-expands into a locking groove 19 (i.e., a counterbore) at the end of the bore to permanently lock the pin in place (col. 4 lines 4-38). Goss states that "the contour and shoulder 19a of the locking groove 19 locks the expanded ring therein preventing its recompression which prevents retraction of the pin 12 from bushing 14 and securely fixes the module 1 onto the mounting

bracket 22,22," (Col. 4, lines 26-30) and that "any attempt to withdraw the pin 12 is resisted." (Col. 4, line 33). Goss teaches away from a resilient member releasably engaging a stud, and therefore does not anticipate the claimed invention.

Independent claims 14, 22, 23, 24, and 25 also each include a limitation of a torroidal member or spring defining an opening configured to resiliently expand to allow passage of a stud upon application of a force along an axis of the stud and to relax to releasably engage the stud. Accordingly, these claims are not anticipated by Goss for the reasons provided above.

Claims 2, 3, and 5-8 depend from claim 1 and are not anticipated for the reasons provided above that claim 1 is not anticipated.

Claims 4 and 19 are canceled, rendering their rejection moot.

C. Paragraph 5

Anticipation, Section 102: The Office Action rejects claims 1-3, 6-8, and 24 under 35 U.S.C. § 102(b) as being anticipated by United States Patent No. 2,577,507 issued to Bergdorf. Again, anticipation requires that each and every limitation of the claim be disclosed, either expressly or under principles of inherency, in a single prior art reference.

Claim 1 as amended recites, as one limitation, a torroidal radial spring or torroidal resilient member defining an opening "configured to resiliently contact said stud to expand radially outwardly to permit passage of said end portion of said stud upon application of a force parallel to said axis ..." The Bergdorf reference neither expressly nor under principles of inherency discloses that limitation. Accordingly, the applicants respectfully submit that the Bergdorf reference does not anticipate claim 1.

To the contrary, Bergdorf discloses fingers 12 that contact a head 16. A spring 14 may be placed over fingers 12 to prevent the fingers from being sprung, but this spring does not contact or retain the head 16.

Claim 24, as amended, includes, as one limitation, a resilient spring member having "an outer surface constrained by contacting said surface of said other one of said door and said enclosure to prevent movement of said outer

surface of said resilient member radially outward ..." Bergdorf does not disclose or suggest constraint on the outer surface of the spring. Instead, a coil spring rests over flares in the fingers 12. As such, spring 14 in Bergdorf is a biasing device for fingers 12. It can not act as an engaging member, because it is only kept in place by its association with the fingers 12.

D. Paragraph 6

Anticipation, Section 102: The Office Action rejects claims 1-8, 14, 15, and 22-25 under 35 U.S.C. § 102(b) as being anticipated by United States Patent No. 5,154,308 issued to Douglas A. Larson. Again, anticipation requires that each and every limitation of the claim be disclosed, either expressly or under principles of inherency, in a single prior art reference.

Claim 1 as amended recites, as one limitation, a torroidal resilient member defining an opening "wherein said opening of said resilient member is configured to expand to release said outer surface of said stud upon application of an opposite force parallel to said axis ..." The Larson reference neither expressly nor under principles of inherency discloses that limitation. Accordingly, the applicants respectfully submit that the Bergdorf reference does not anticipate claim 1.

To the contrary, the retainer ring 108 is part of the collar 96, which the Office Action refers to as a stud, and is displaced with the rest of the collar 96.

For the foregoing reasons, claim 1 is not anticipated by Larson.

Similarly claims 14, and 22-25 each include as two limitations a stud and a torroidal member or torroidal spring configured to expand to permit passage of the stud. Accordingly, these claims are not anticipated by Larson for the reasons provided above that claim 1 is not anticipated by Larson.

E. Paragraphs 7 and 8

Obviousness, Section 103: Office Action rejects claim 15 under 35 U.S.C. § 103 as unpatentable over United States Patent No. 5,639,113 issued to Goss. In response to that rejection, the applicants offer the following remarks

establishing the nonobviousness of the claimed invention. In view of those remarks, the applicants submit that claim 15 is in condition for allowance.

The applicants contend that claim 15 is not subject to rejection under 35 U.S.C. § 103 because, the modification suggested by the Office Action is not a mere reversal of the essential working parts of the coupling as suggested, but a hindsight reconstruction of the applicants' invention. There is no suggestion or motivation in the prior art to make the suggested modification. Therefore, the proposed modification of Goss fails to establish prima facie obviousness.

The Office Action states that there does not appear to be any criticality of position on one and not the other structure. To the contrary, as described beginning at page 11, line 23, mounting the spring in the door allows convenient placement of a release mechanism aligned with the opening of the spring and exposed when the door is closed.

F. Paragraph 9

Response to Arguments: The response is acknowledged. The claims have been amended to include further structural limitation of the configuration for releasable engagement.

The Office Action does not address the limitation in claim 25 of a constraining surface that constrains the outer surface of the resilient member. Claim 25 is patentable over the cited references because the cited references do not disclose or suggest a resilient member with a torroidal configuration whose outer surface is constrained to prevent expansion and while the opening is expandable to permit passage of a stud, wherein the resilient member releasably engages the stud when the door is closed. To the contrary, the cited art discloses a resilient member with an outer surface and opening that expand and relax together.

G. Newly added Claim

Claims 26 is newly added in response to the Examiner's suggestion during the telephonic interview of April 28, 2003. Claim 26 uses means-plus-function language to define the means for releasably engaging and disengaging

the stud and the torroidal spring to the structure disclosed in the specification and equivalents for performing that function.

Claim 26 recites "means for releasably engaging and disengaging said stud and said torroidal spring by application of forces parallel to an axis of said stud". The means recited in claim 26 should be construed according to 35 U.S.C. § 112, paragraph 6. As such, the specific means defined in the specification (and their equivalents) define the scope of these features. See *In re Donaldson*, 16 F.3d 1189, 29 U.S.P.Q.2d 1845, 1848 (Fed. Cir. 1994) ("...one construing means-plus-function language in a claim must look to the specification and interpret that language in light of the corresponding structure, material, or acts described therein, and equivalents thereof, to the extent that the specification provides such disclosure."). In the specification, specific means are defined. The applicants point to the disclosure beginning at page 8, line 17, for example. A spring housing attached to the door defines a spring cavity constraining radial spring 50. The diameter of grooved end portion 30 of stud 22 constrains the relaxed inner diameter of radial spring 50 (see Page 9, lines 14-19). Also see the paragraph beginning at page 10, line 26 wherein the inner surface of radial spring 50 expands while the outer surface is constrained. As such, claim 26 is patentable over the art of record.

H. Conclusion

For all of the foregoing reasons, claim 1 is in condition for allowance and would not have been anticipated by or obvious in view of Goss, Bergdorf, or Larson. Because claims 2, 3, and 6-8 depend from a patentable claim, they are also patentable. See, e.g., *In re McCarn*, 101 USPQ 411, 413 (CCPA 1954) ("sound law" requires allowance of dependent claims when their antecedent claims are allowed). Moreover, these claims are nonobvious in view of the applied references.

Claims 14, 15, 22, 23, 24, 25, and newly added claim 26 similarly are in condition for allowance for the foregoing reasons.

The rejections under 35 U.S.C. §§ 102, 103, and 112 and the objections should all be withdrawn. Favorable action is earnestly solicited. Finally, the Examiner is invited to call the applicants' undersigned representative if any further action will expedite the prosecution of the application or if the

Examiner has any suggestions or questions concerning the application or the present Response. In fact, if the claims of the application are not believed to be in full condition for allowance, for any reason, the applicants respectfully request the constructive assistance and suggestions of the Examiner in drafting one or more acceptable claims pursuant to MPEP § 707.07(j) or in making constructive suggestions pursuant to MPEP § 706.03 so that the application can be placed in allowable condition as soon as possible and without the need for further proceedings.

Respectfully submitted,

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The Assistant Commissioner for Patents is hereby authorized to charge payment to Deposit Account No. **18-0350** of any fees associated with this communication.

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450

May 27, 2003

Patricia C. Bouella

VERSION WITH MARKINGS TO SHOW CHANGES MADE**RECEIVED**

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GROUP 3600IN THE CLAIMS:

- 1 1. (~~Twice~~Once Amended) A system for providing releasable engagement
2 between two structures, said system comprising:
- 3 a stud extending outwardly from a first one of said structures along an
4 axis, said stud having an outer surface oriented at an angle to said axis to define
5 an outer diameter along at least an end portion of said stud; and
- 6 a resilient member ~~positioned~~ secured adjacent a surface of a second one
7 of said structures, said resilient member having a substantially torroidal
8 configuration defining an opening, said opening having a relaxed state smaller
9 than said outer diameter of said end portion of said stud;
- 10 ~~said resilient member being configured to allow~~ wherein said opening of
11 said resilient member is configured to resiliently contact said stud to expand
12 radially outwardly to permit passage of said end portion of said stud upon
13 application of a force parallel to said axis; ~~and~~
- 14 wherein said opening of said resilient member is configured to releasably
15 engage said outer surface of said stud when said resilient member is relaxed,
16 thereby providing releasable engagement between said structures; and
- 17 wherein said opening of said resilient member is configured to expand to
18 release said outer surface of said stud upon application of an opposite force
19 parallel to said axis, thereby releasing said structures.

- 1 14. (Three times Amended) A system for providing releasable engagement
2 between two structures and for maintaining a predetermined gap between said
3 structures, said system comprising:
- 4 a substantially cylindrical stud mounted on one of said structures and
5 extending outwardly therefrom along an axis, said stud having a groove

6 extending about a periphery of said stud and defining a surface at an angle to
7 said axis of said stud; and

8 a torroidal radial spring ~~positioned~~restrained adjacent a surface of the
9 other one of said structures, said radial spring having an outer surface contacting
10 said surface of said other one of said structures to prevent movement of said
11 outer surface radially outwardly with respect to said axis of said stud, said radial
12 spring also having an inner surface movable radially outwardly with respect to
13 said axis of said stud from a relaxed position to an expanded position;

14 said inner surface of said radial spring defining an inner diameter smaller
15 than the maximum diameter of said stud when said radial spring is in said
16 relaxed position, and said inner surface being configured to resiliently contact
17 said stud to expand radially outwardly to said expanded position to permit
18 passage of said stud when an axial force is applied to said stud or said radial
19 spring biasing said first and second structures apart~~said radial spring is~~
20 ~~expanded~~, said radial spring being configured to releasably engage said groove
21 of said stud when said radial spring is in said relaxed position, thereby providing
22 releasable engagement between said structures, and thereby maintaining said
23 predetermined gap between said structures.

24 15. (Twice Amended) The system as recited in claim 14, one of said structures
25 comprising a frame and the other of said structures comprising a door, said stud
26 being mounted on said frame and said radial spring being ~~{positioned}~~ mounted
27 on said door ~~adjacent a surface of said door~~.

1 22. (Twice Amended) A latching assembly for providing releasable
2 engagement between two structures, said latching assembly comprising:

3 a stud extending outwardly from one of said structures along an axis, said
4 stud having an outer surface oriented at an angle to said axis; and

5 a resilient member positioned adjacent a surface of the other one of said
6 structures, said resilient member having a substantially torroidal configuration,
7 an outer surface of said resilient member contacting said surface of said other

8 one of said structures to prevent movement of said outer surface of said resilient
9 member radially outwardly, ~~and an inner surface of said resilient member~~
10 defining an opening ~~and moveable radially outwardly~~;

11 said resilient member having a relaxed position wherein said opening is
12 smaller than said stud to releasably engage said outer surface of said stud, and
13 said resilient member having an expanded position wherein said opening is sized
14 to permit passage of said stud.

1 23. (~~Twice~~Once Amended) An enclosure latching system for providing
2 releasable engagement between a door and an enclosure, said latching system
3 comprising:

4 a stud extending outwardly from one of said door and said enclosure along
5 an axis, said stud having an outer surface oriented at an angle to said axis; and

6 a resilient spring member ~~positioned~~secured in a spring housing adjacent
7 a surface of the other one of said door and said enclosure, said resilient member
8 having:

9 a substantially torroidal configuration,

10 an outer surface constrained by contacting said surface of said
11 other one of said door and said enclosure to prevent movement of
12 said outer surface of said resilient member radially outward, and

13 an inner surface moveable radially outward;

14 said torroidal configuration of said resilient member defining an opening
15 resiliently expandable from a relaxed state smaller than said stud, ~~and being~~
16 expandable radially outward to an expanded state to permit passage of said stud,
17 said resilient member being configured to releasably engage said surface of said
18 stud in said relaxed state, thereby providing releasable engagement between said
19 door and said enclosure.

1 24. (Once Amended) A latching system for releasably engaging a door to a
2 frame comprising:

3 a stud mounted on one of said door and said frame and having an axis
4 and a surface, at least a portion of said surface being angled with respect to said
5 axis of said stud; and

6 a coiled spring mounted in a housing on the other one of said door and
7 said frame and having an axis arranged in a circle to form a torroidal
8 configuration and an outer surface constrained by contacting said housing to
9 prevent movement of said outer surface of said resilient member radially
10 outward, said torroidal configuration of said spring defining an opening which is
11 exposed when said door is open and is expandable by introduction of said stud
12 therein to allow the stud to pass through said opening and which relaxes to
13 releasably engage said angled surface of said stud.

1 25. (Once Amended) A door assembly comprising:

2 a frame;

3 a door mounted for movement with respect to said frame;

4 a stud extending from one of said frame and said door along an axis, said
5 stud having an outer surface oriented at an angle to said axis;

6 a resilient member retained adjacent a surface of the other one of said
7 frame and said door, said resilient member having a substantially torroidal
8 configuration defining an outer surface and an opening;

9 said opening of said resilient member being resiliently expandable from a
10 relaxed diameter smaller than said stud to an expanded diameter sufficient
11 and configured to expand radially outwardly to permit passage of said stud by
12 application of a force along said axis biasing said frame and said door together;

13 said outer surface of said resilient member being in contact with said
14 surface of said other one of said frame and said door, said surface being
15 positioned to constrain said outer surface of said resilient member and prevent
16 movement of said outer surface of said resilient member radially outwardly;

17 wherein when said door is closed with respect to said frame, said resilient
18 member releasably engages said outer surface of said stud, thereby providing
19 releasable engagement between said door and said frame.